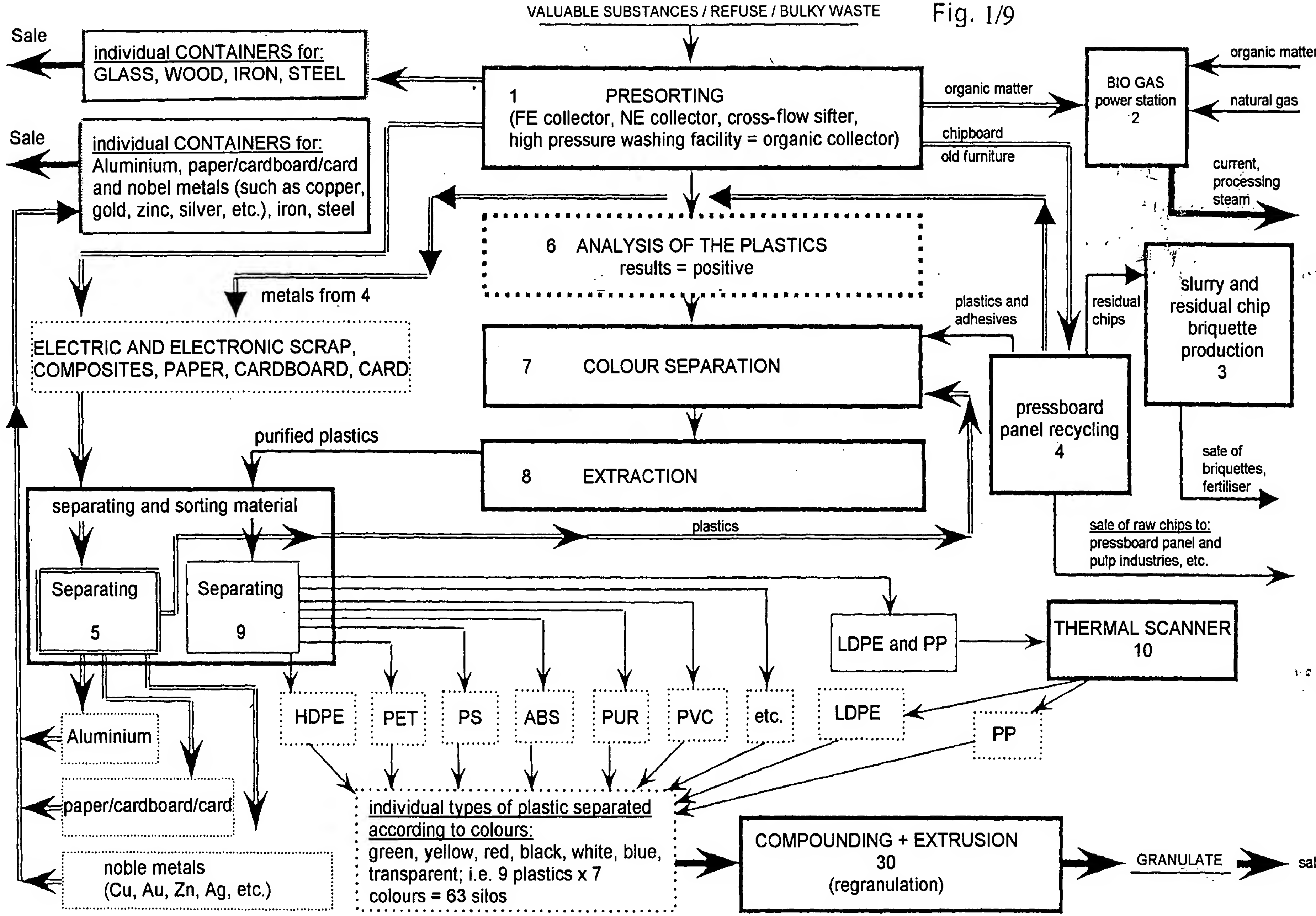
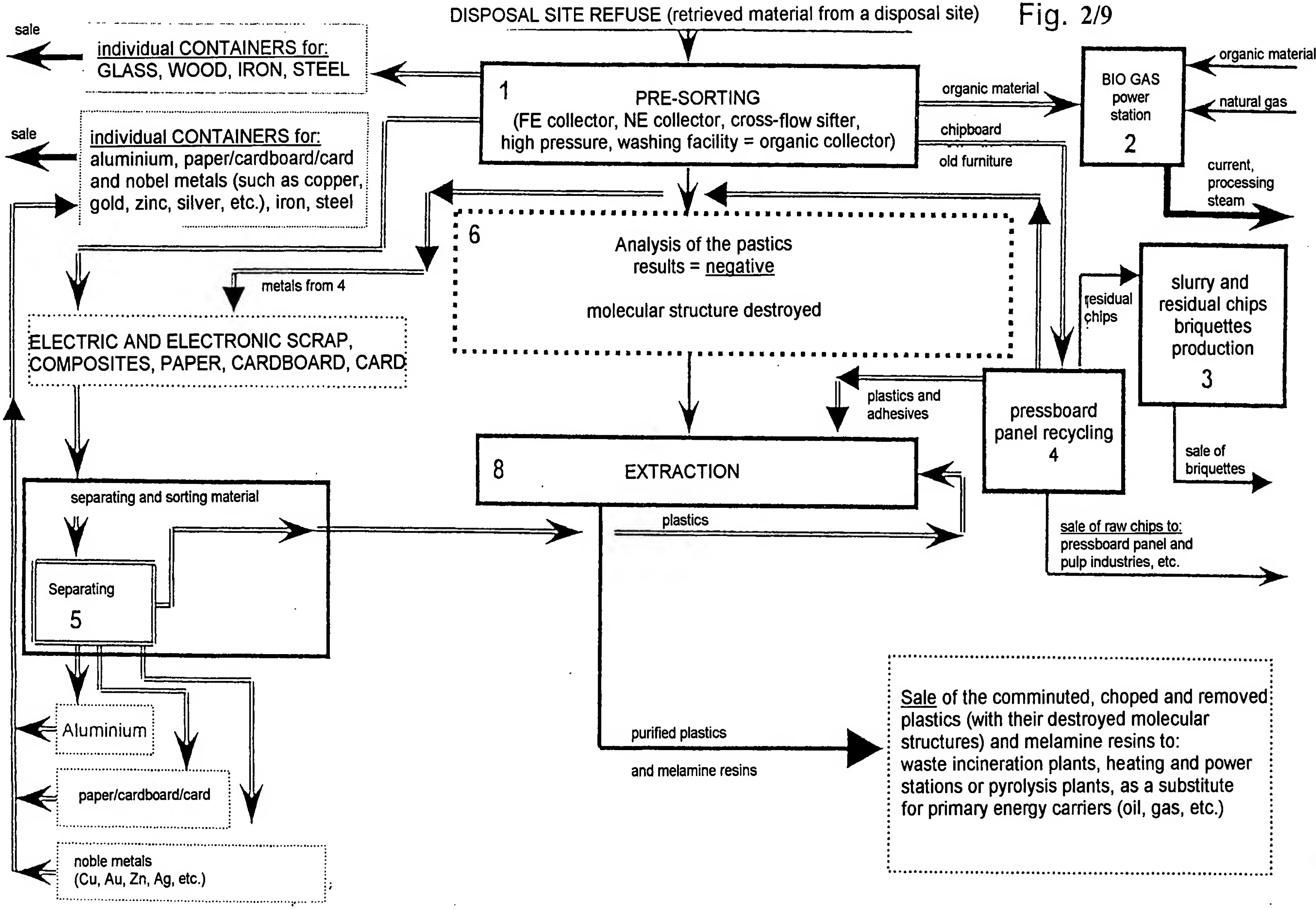


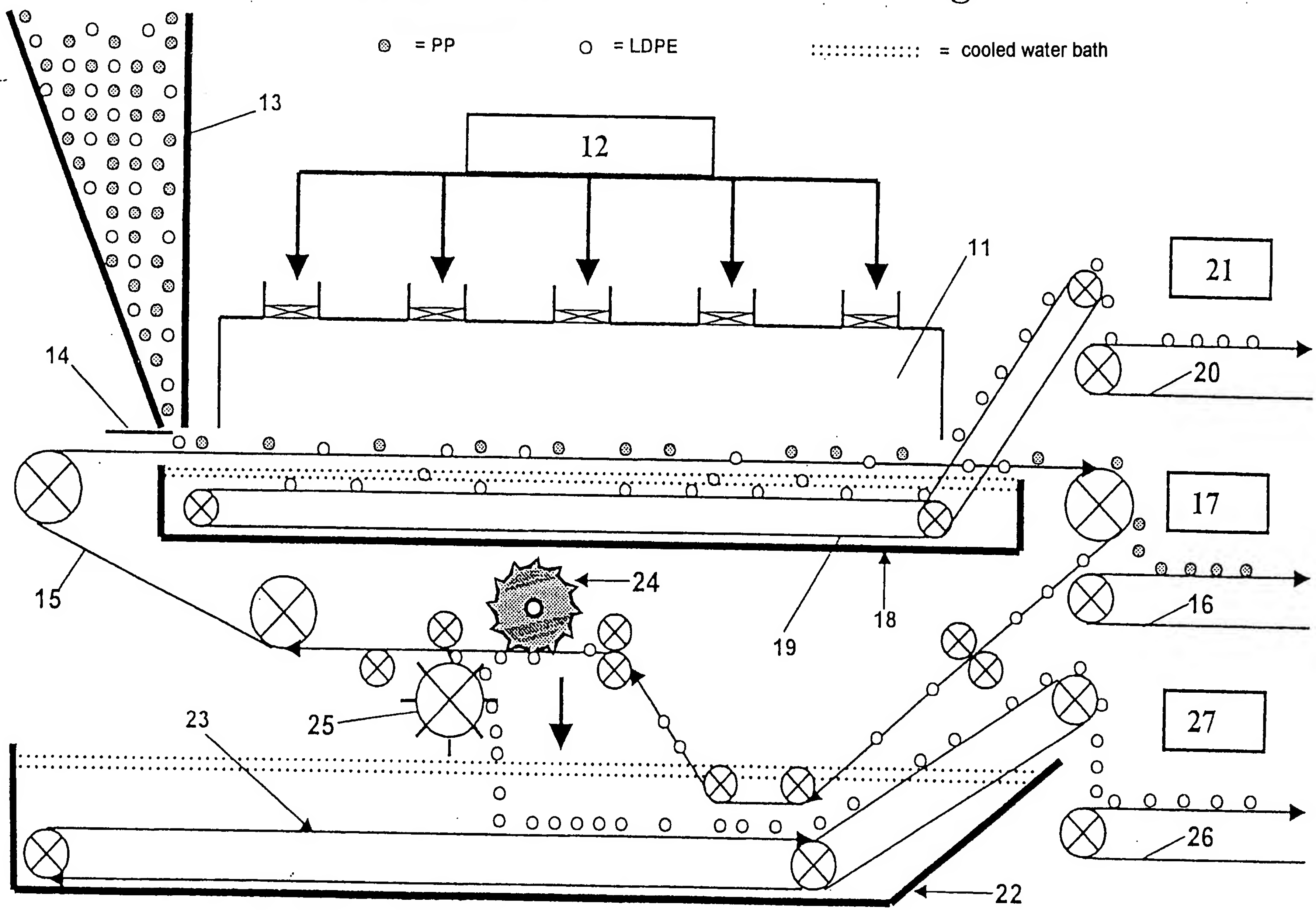
Fig. 1/9

Fig. 2/9


DISPOSAL SITE REFUSE (retrieved material from a disposal site)
1
PRE-SORTING
(FE collector, NE collector, cross-flow sifter,
high pressure, washing facility = organic collector)
sale
individual CONTAINERS for:
GLASS, WOOD, IRON, STEEL
sale
individual CONTAINERS for:
aluminium, paper/cardboard/card
and nobel metals (such as copper,
gold, zinc, silver, etc.), iron, steel
organic material
chipboard
old furniture
BIO GAS
power
station
2
organic material
natural gas
current,
processing
steam
6
Analysis of the pastics
results = negative
molecular structure destroyed
metals from 4
ELECTRIC AND ELECTRONIC SCRAP,
COMPOSITES, PAPER, CARDBOARD, CARD
residual
chips
slurry and
residual chips
briquettes
production
3
sale of
briquettes
plastics and
adhesives
pressboard
panel recycling
4
sale of raw chips to:
pressboard panel and
pulp industries, etc.
8
EXTRACTION
plastics
separating and sorting material
Separating
5
Aluminium
paper/cardboard/card
noble metals
(Cu, Au, Zn, Ag, etc.)
purified plastics
and melamine resins
Sale of the comminuted, choped and removed
plastics (with their destroyed molecular
structures) and melamine resins to:
waste incineration plants, heating and power
stations or pyrolysis plants, as a substitute
for primary energy carriers (oil, gas, etc.)

THERMAL SCANNER

Fig. 3/9



VALUABLE SUBSTANCES / REFUSE / BULKY WASTE

Fig. 4/9

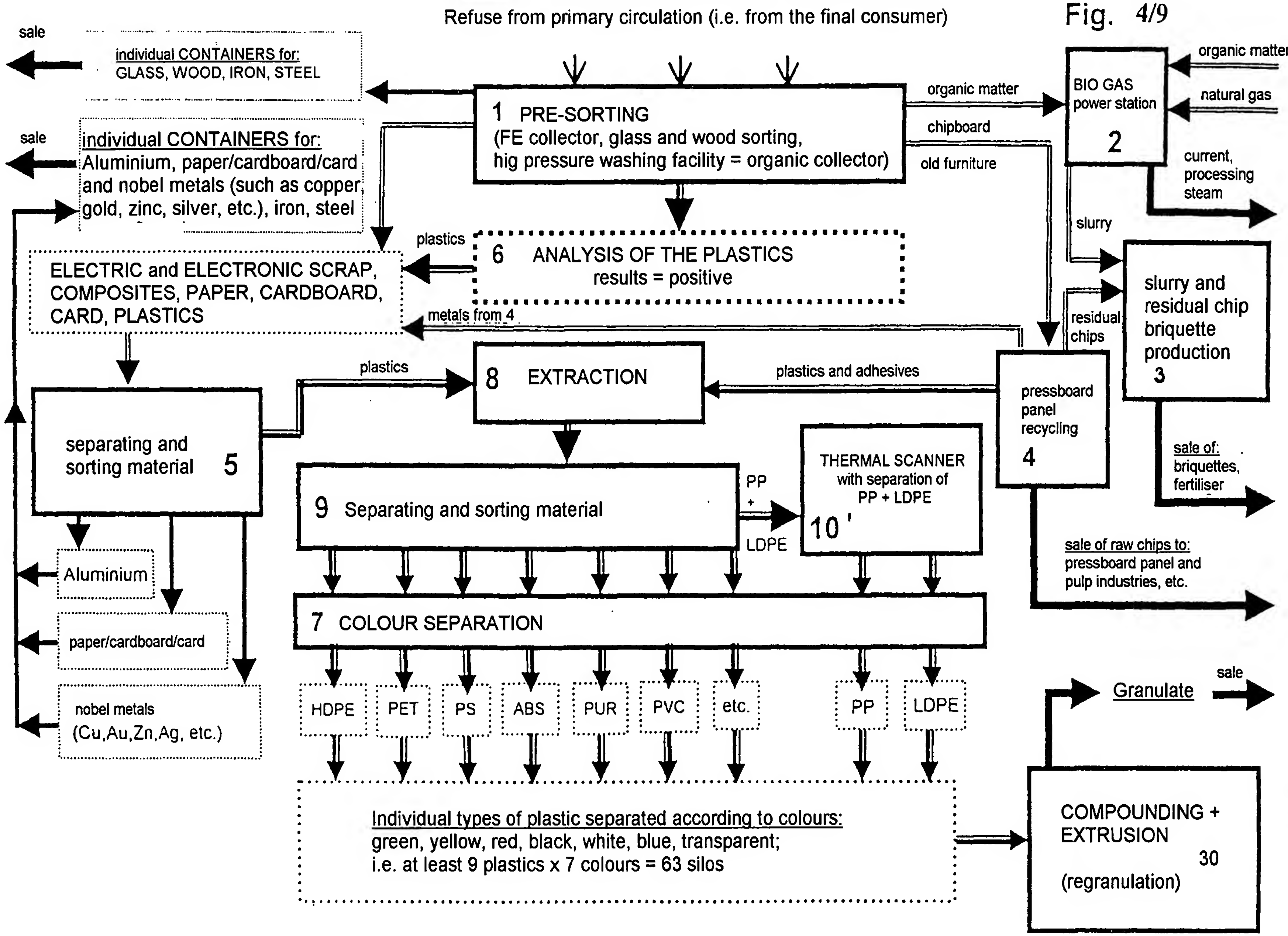


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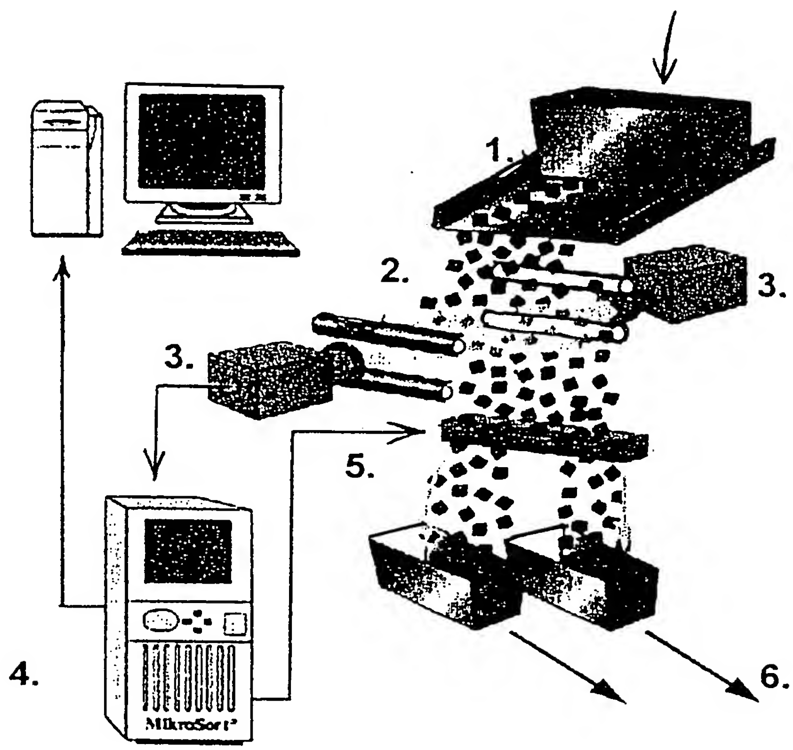
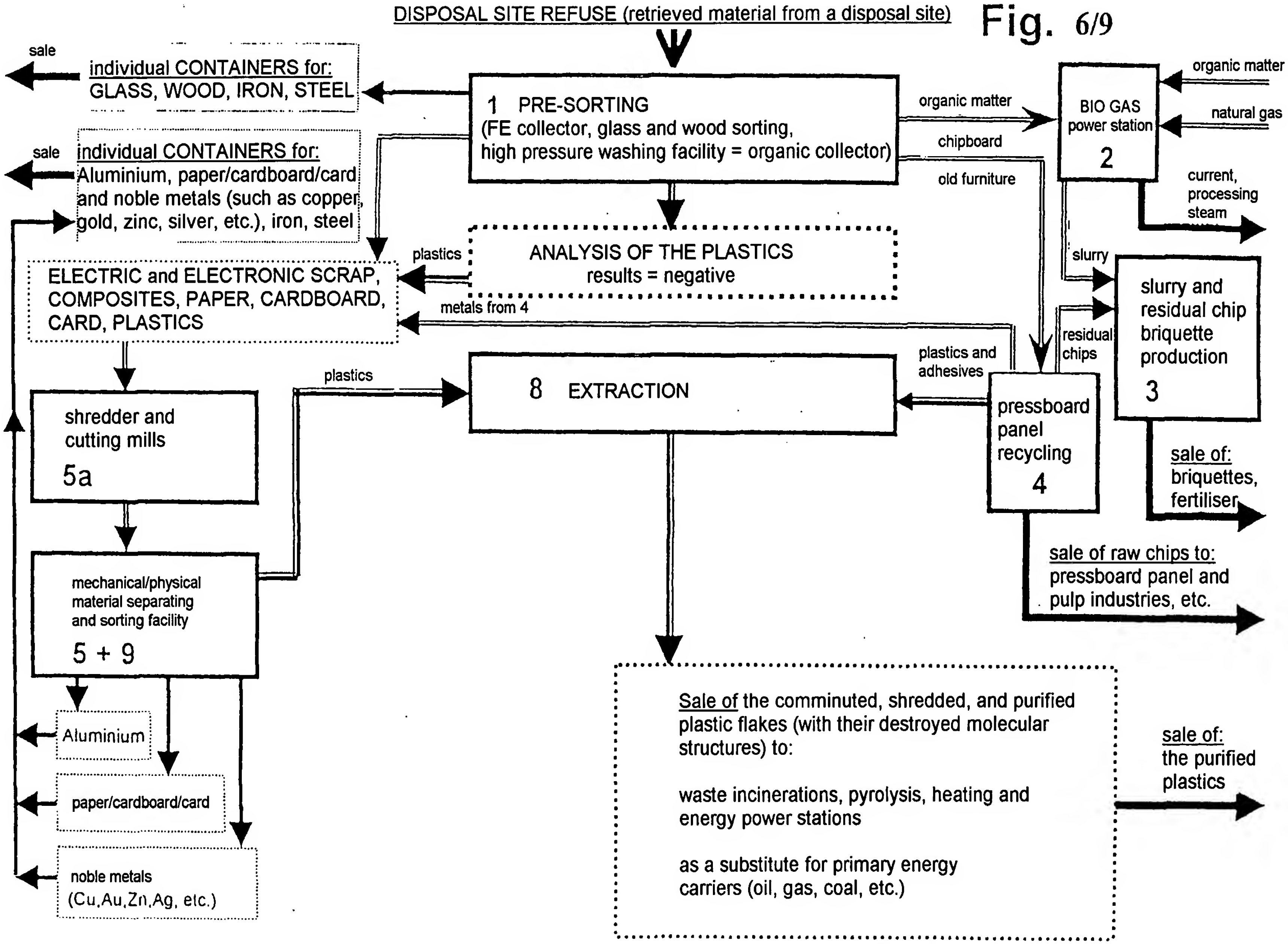
Fig. 5/9




DISPOSAL SITE REFUSE (retrieved material from a disposal site)
1 PRE-SORTING
(FE collector, glass and wood sorting,
high pressure washing facility = organic collector)
individual CONTAINERS for:
GLASS, WOOD, IRON, STEEL
sale
individual CONTAINERS for:
Aluminium, paper/cardboard/card
and noble metals (such as copper,
gold, zinc, silver, etc.), iron, steel
sale
ELECTRIC and ELECTRONIC SCRAP,
COMPOSITES, PAPER, CARDBOARD,
CARD, PLASTICS
ANALYSIS OF THE PLASTICS
results = negative
plastics
metals from 4
shredder and
cutting mills
5a
mechanical/physical
material separating
and sorting facility
5 + 9
Aluminium
paper/cardboard/card
noble metals
(Cu,Au,Zn,Ag, etc.)
plastics
8 EXTRACTION
organic matter
chipboard
old furniture
BIO GAS
power station
2
organic matter
natural gas
current,
processing
steam
slurry
residual
chips
slurry and
residual chip
briquette
production
3
sale of:
briquettes,
fertiliser
plastics and
adhesives
pressboard
panel
recycling
4
sale of raw chips to:
pressboard panel and
pulp industries, etc.
Sale of the comminuted, shredded, and purified
plastic flakes (with their destroyed molecular
structures) to:
waste incinerations, pyrolysis, heating and
energy power stations
as a substitute for primary energy
carriers (oil, gas, coal, etc.)
sale of:
the purified
plastics
Fig. 6/9

10/009313

THERMAL SCANNER comprising opto-electronic colour and type-separation

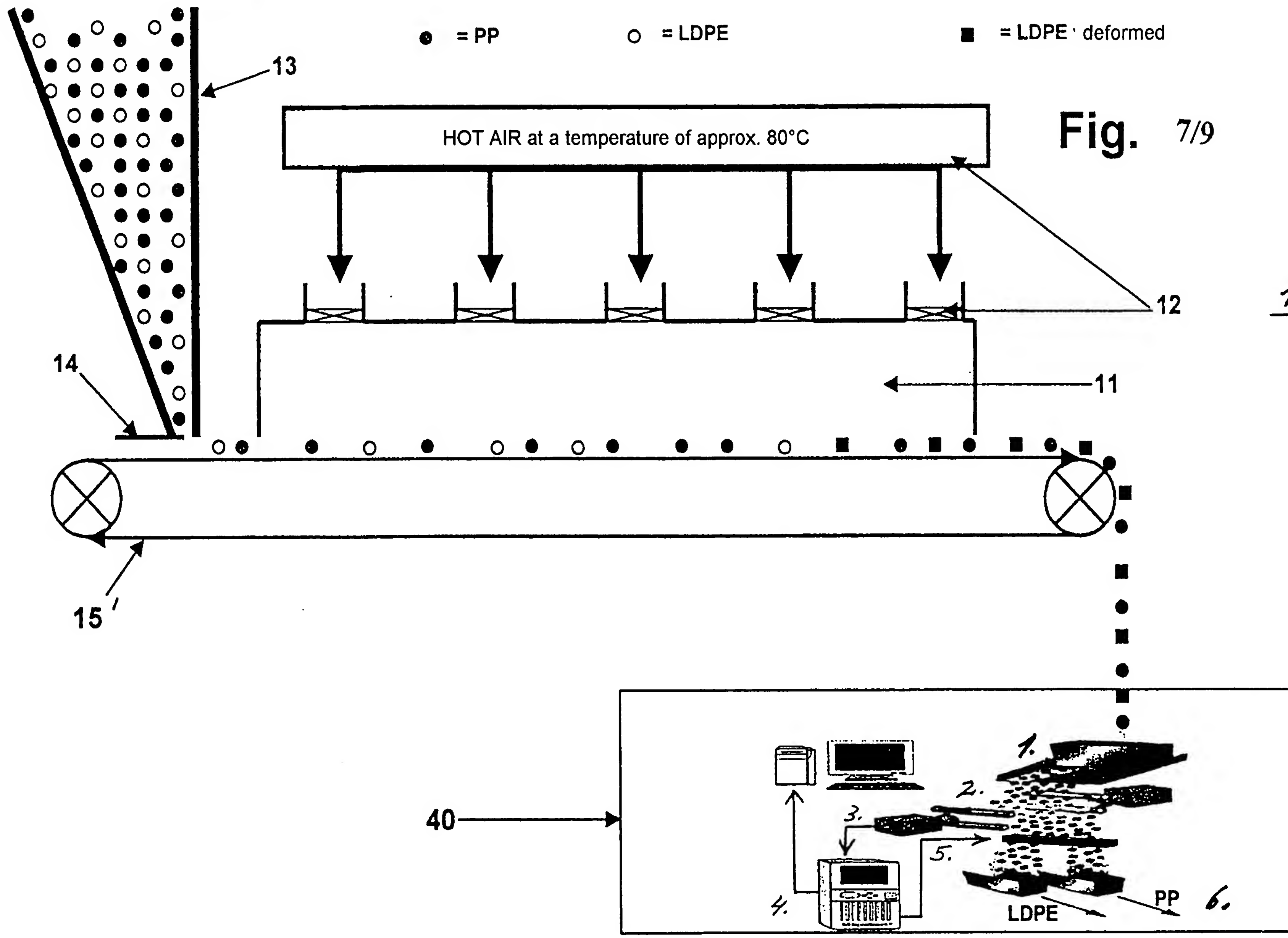


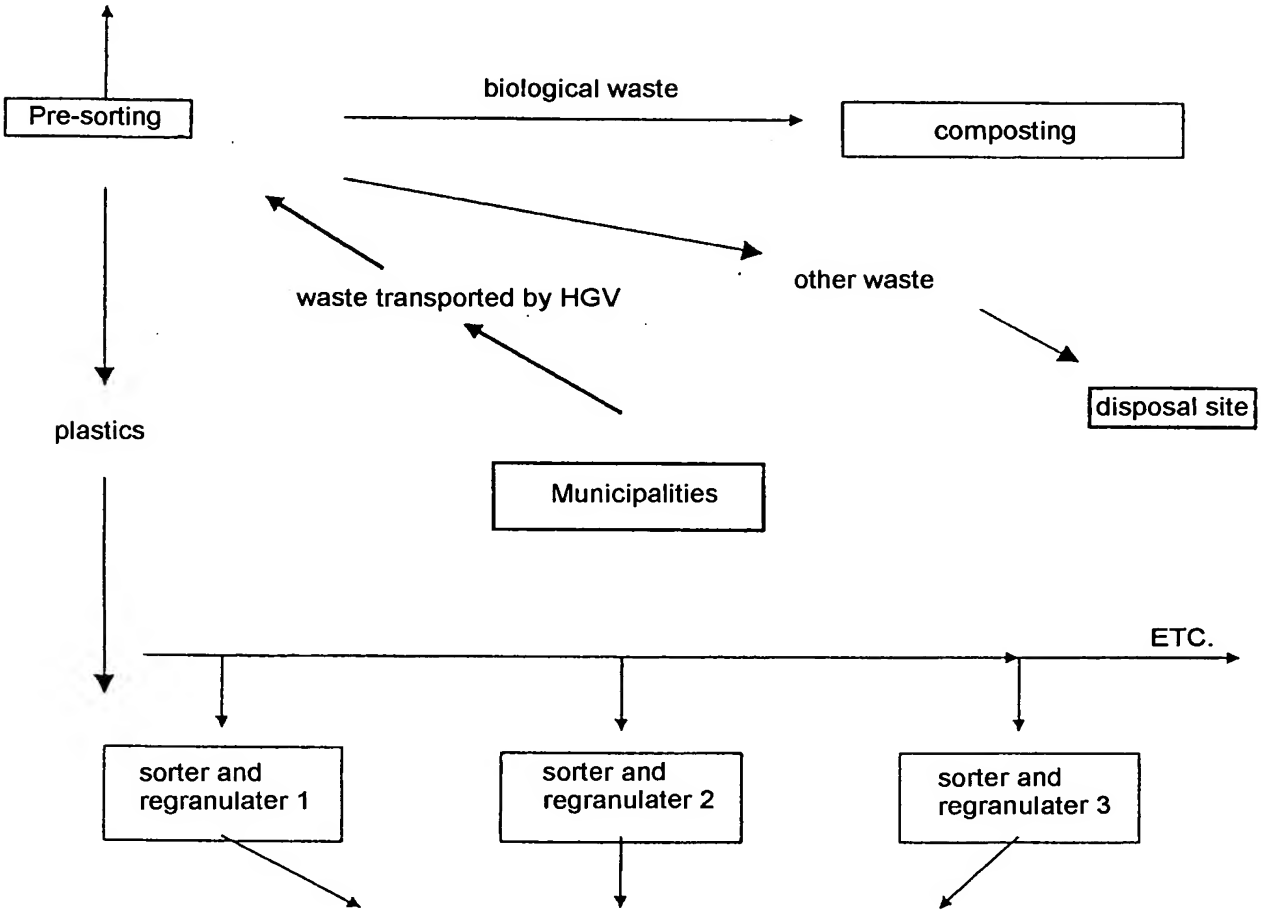
Fig. 7/9

E "Grüne Punkt" SYSTEM

in Austria and Germany

Fig. 8/9

For direct sale:
Glass, wood, paper, cardboard, card
aluminium, iron/sheet metal/steel, nobel
metals (copper, tin, zinc, etc.)



plastic regranulate (with only a 95% degree of purity)
chopped composite material (firing material for the cement industry)

Advantages:

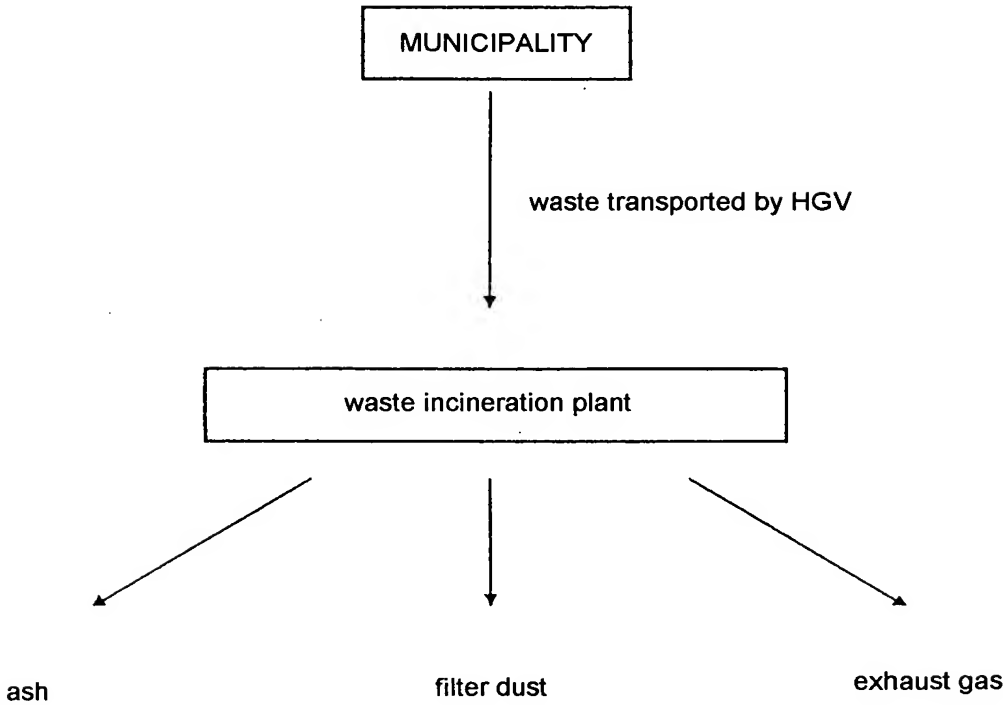
- valuable substance are reclaimed.
- no waste incineration / no valuable substances destroyed
- little exhaust gas, no filter dust.
- no primary energy destroyed by firing.

Disadvantages:

- large hauling distances
- cannot reclaim the aluminium in composite material. cannot recycle composite material.
- the plastic regranulate has a degree of purity of only 95%.
- the compost is highly subsidised, as there is no market for it.

WASTE INCINERATION in Europe

Fig. 9/9



Advantages:

- there is no costly pre-sorting.
- the waste incineration plant can process any waste that turns up.

Disadvantages:

- ash is created which has to be specially disposed of, because it contains loaded residues such as aluminium oxide.
- filter dust is created which turns up in the flue gas washing facility and has to be specially disposed of because it contains poisons, e.g. furances, dioxines, or their combustion residues.
- transporting the waste to the incineration plant requires wide roads leading up to it, because of the enormous capacity of at least 200,000 tonnes per year. this creates considerable transport costs.
- considerable quantities of primary energy, such as gas or heating oil, have to be fired in order to incinerate e.g. biological waste (cut grass, etc.)
- the large amount of HGV traffic is an annoyance to nearby residents.
- valuable substances are destroyed.
- 3 tonnes of burning material creates 1 tonne of slag to be disposed of, i.e. the recycling rate is only 66%.